Implementation of Safe Supply Alternatives During Intersecting COVID-19 and Overdose Health Emergencies in British Columbia, Canada, 2021

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Objectives. To explore the implementation and effectiveness of the British Columbia, Canada, risk mitigation guidelines among people who use drugs, focusing on how experiences with the illicit drug supply shaped motivations to seek prescription alternatives and the subsequent impacts on overdose vulnerability.

Methods. From February to July 2021, we conducted qualitative interviews with 40 people who use drugs in British Columbia, Canada, and who accessed prescription opioids or stimulants under the risk mitigation guidelines.

Results. COVID-19 disrupted British Columbia's illicit drug market. Concerns about overdose because of drug supply changes, and deepening socioeconomic marginalization, motivated participants to access no-cost prescription alternatives. Reliable access to prescription alternatives addressed overdose vulnerability by reducing engagement with the illicit drug market while allowing greater agency over drug use. Because prescriptions were primarily intended to manage withdrawal, participants supplemented with illicit drugs to experience enjoyment and manage pain.

Conclusions. Providing prescription alternatives to illicit drugs is a critical harm reduction approach that reduces exposure to an increasingly toxic drug supply, yet further optimizations are needed. (*Am J Public Health*. 2022;112(S2):S151–S158. https://doi.org/10.2105/AJPH.2021.306692)

AJPH Supplement 2, 2022, Vol 112, No. S2

The United States and Canada have experienced sharp increases in fatal and nonfatal overdoses during the COVID-19 pandemic.[1,2] This escalation of the overdose crisis during the pandemic has been attributed to disruptions to addiction treatment and harm reduction services,[3] overall increases in substance use,[4] and social-distancing measures implemented to prevent the spread of COVID-19.[5,6] Consistent with the most recent waves of the overdose crisis,[7] this increase in overdose deaths has occurred alongside continued changes to the illicit drug supply that have heightened overdose vulnerability.[8,9] Beginning in the 2010s, the replacement of heroin with illicitly manufactured fentanyl and widespread adulteration with fentanyl and other substances have resulted in an increasingly unpredictable supply that has amplified the overdose crisis.[7] Preliminary drug surveillance data from during the pandemic suggest that this situation has escalated as the drug supply in settings across North America has become characterized by fluctuations in potency and adulterants (e.g., etizolam, xylazine) associated with heightened overdose risk.[10,11]

This dynamic is of particular concern in British Columbia, Canada, where overdose deaths increased from 983 in 2019 to 1767 in 2020[12] and have exceeded the total number of COVID-19 deaths

since the outset of the pandemic.[13] Since 2016, fentanyl has replaced heroin as the dominant opioid in British Columbia's illicit drug supply,[14,15] stimulant use has increased dramatically,[16] and novel psychoactive substances (NPS; e.g., etizolam) have increasingly been found in the illicit drug supply.[17–19] Even before the pandemic, British Columbia had implemented North America's most comprehensive overdose response, including the implementation and scale-up of addiction treatment and harm reduction services (e.g., oral and injectable medications for opioid use disorder, naloxone distribution, drug checking, supervised consumption sites). Yet, even though province-wide data demonstrated that this response averted thousands of overdose deaths and overdoses decreased considerably in 2019,[12,20] it has proven unable to more fully address the harms driven by what can be characterized as a toxic illicit drug supply.

Against this backdrop, drug user activists, alongside a growing contingent of researchers, health professionals, and policymakers, have called for the implementation of "safe supply" approaches, that is, approaches providing people who use drugs (PWUD) with pharmaceutical-grade alternatives to illicit drugs.[21–23] Safe supply approaches extend the logic of medication-based treatment—especially heroin-assisted treatment programs proven effective in clinical trials—to provide regulated alternatives to illicit drugs, usually opioids, outside treatment contexts.[23] Beginning in January 2019, the first safe supply pilot program was implemented in a supervised consumption site in Vancouver, distributing hydromorphone tablets for onsite use.[24] Preliminary research demonstrated the acceptability and feasibility of this approach[25] as well as reductions in illicit drug use and improvements in quality of life.[26] Similar pilot programs were subsequently scaled up elsewhere in British Columbia but were not yet operational at the outset of the COVID-19 pandemic. The only pilot program providing access to a regulated alternative to illicit stimulants (i.e., dextroamphetamine) was accessible only to polysubstance-using PWUD receiving injectable hydromorphone or diacetylmorphine as medications for opioid use disorder at 1 Vancouver-based clinic.[27]

Following the arrival of the COVID-19 pandemic, the British Columbia government, in collaboration with researchers, clinicians, and PWUD, quickly developed and, in March 2020, released new clinical guidelines—termed "risk mitigation"—to provide guidance to clinicians and facilitate access to prescription opioids (i.e., hydromorphone, sustained-release oral morphine), stimulants (i.e., dextroamphetamine, methylphenidate), and benzodiazepines (i.e., clonazepam, diazepam) for people otherwise dependent on the illicit drug market during the pandemic.[28] The risk mitigation guidelines were explicitly intended to provide pharmaceutical-grade drugs to "support a reduced risk of withdrawal, exposure to COVID-19, and exposure to a limited and toxic drug supply."[28] The guidelines are briefly summarized in Box 1. The British Columbia Ministry of Mental Health and Addictions' preliminary report revealed that opioid and stimulant medications were dispensed

BOX 1— Summary of British Columbia Government's 2020 Risk Mitigation Clinical Guidelines for People Dependent on the Illicit Drug Market

Eligibility
- **Individuals who are deemed at risk for COVID-19, COVID-19 positive (confirmed), or suspected to be COVID-19 positive.**
- **Active substance use (opioids, stimulants, benzodiazepines).**
- **Youths (<19 years) possibly eligible if they have provided informed consent and receive additional education. Referrals to health and social services should be provided.**

Screening and enrollment
- **Screening includes assessment of active substance use, substance use history, overdose history, comorbid conditions, prescribed medications, and access to prescriber.**
- **Enrollment through general practitioner, nurse practitioner, specialized rapid access addiction clinics, or opioid treatment clinics. Additional support and referrals available.**

Pharmaceutical options (opioids and stimulants)
- **Oral hydromorphone tablets: 1–3 8-mg tablets every hour as needed, up to 14 tablets daily.**
- **Sustained-release oral morphine: taken twice daily, 80–240 mg per day.**
- **dextroamphetamine SR: 10–20 mg, up to 40 mg per day.**
- **dextroamphetamine IR: 10–20 mg, up to 80 mg per day.**
- **methylphenidate SR: 20–40 mg, up to 100 mg per day.**
- **methylphenidate IR: 10–20 mg, up to 100 mg per day.**

Note. IR = instant release; SR = slow release.

to 3771 and 1220 persons, respectively, from March 27, 2020 to February 28, 2021, representing only a small percentage of the approximately 100 000 people estimated to have an opioid use disorder in British Columbia (similar estimates are unavailable for stimulant use disorder).[29]

We undertook this qualitative study to explore the implementation and effectiveness of the risk mitigation guidelines among PWUD in British Columbia, focusing on how experiences with the illicit drug supply shaped motivations to seek prescription alternatives and subsequent impacts on overdose vulnerability.

METHODS

Between February and July 2021, we conducted qualitative interviews with PWUD in British Columbia who reported accessing or trying to access prescription opioids or stimulants from a physician after the March 2020 release of the risk mitigation guidelines. We drew on rapid qualitative methods using our familiarity with the setting and relationships with community-based organizations across the province to undertake a contextually informed study of the implementation and effectiveness of the risk mitigation guidelines—an approach common amid public health emergencies.[30] Eligible participants were older than 19 years, had received (or attempted to receive) opioid (i.e., hydromorphone, sustained-release oral morphine) or stimulant (i.e., dextroamphetamine, methylphenidate) prescriptions since March 2020, and were able to participate in a telephone-based interview.

We recruited participants through research advertisements posted in community-based harm reduction services, community services, and addiction treatment settings across the province. We instructed individuals to contact us via telephone or e-mail if interested in participating in telephone-based interviews. A research assistant (M. M.) telephone-screened individuals for eligibility, explained the study, and scheduled interviews. Some participants were referred from other studies undertaken in our wider research program and were similarly screened for eligibility. A total of 40 PWUD participated in this study (Table 1).

Research team members (T. F., S. M., A. B., A. B., M. M., S. P., T. A.) conducted telephone-based qualitative interviews. Interviews were facilitated using an interview guide developed by drawing on our experience in conducting qualitative research on substance use interventions, including ongoing research on the implementation and effectiveness of safe supply interventions and policies.[21,22,25,26] The interview guide addressed topics that included (1) perceptions of COVID-19 and its impact on the drug supply and overdose crisis, (2) drug use following the implementation

TABLE 1— Demographics of People Who Use Drugs (PWUD) in Interviews About Safe Supply Alternatives: British Columbia, Canada, February–July 2021

Variable	Mean (Range) or No.
Sample size	40
Age, y	39 (19–57)
Gender	
Men	20
Women	19
Transgender, two-spirit, or nonbinary	1
Race/ethnicity	
White	29
Indigenous	7
Other	4
BC health region of residence	
Vancouver coastal	14
Fraser	2
Interior	10
Northern	3
Vancouver Island	11
Illicit drugs used (past 30 d)[a]	
Heroin[b]	25
Fentanyl	33
Methamphetamine	27
Crack cocaine	12
Cocaine	10
Overdose in past year[c]	20

[a]Possible to report use of more than 1 drug.
[b]Term "heroin" remains in use alongside regional slang "down" to refer to street-based opioids. Per provincial drug-checking data, street-based opioids most commonly contain fentanyl.
[c]Includes both opioid and stimulant-related overdoses.

of COVID-19 public health measures, (3) experiences with prescription opioids and stimulants and their impacts on health and social harms, and (4) limitations of the risk mitigation guidelines. We read the informed consent form to participants and obtained verbal consent before commencing interviews. Interviews averaged 37.5 minutes, were audio recorded, and were transcribed. Participants received a $30 honorarium via bank transfer or pickup at our research office (in Vancouver) or partnering community organization (outside Vancouver).

Analysis began at the data collection midpoint, enabling us to draw on preliminary insights to strengthen subsequent interviews. We imported interview transcripts into NVivo (QSR International, Melbourne, Australia), a qualitative data management software program, and analyzed them using deductive and inductive approaches.[31] We developed an initial coding framework that included (1) deductive codes extracted from the interview guide, and (2) inductive codes generated through team discussions following the review of the initial interview transcripts. Multiple team members coded transcripts, and we resolved discrepancies using a consensus-based approach during regular team meetings.

As themes emerged, we drew on the risk environment framework to situate findings in social–, structural–, and physical–environmental contexts. This framework conceptualizes drug-related outcomes as the product of the interplay between environmental influences (i.e., social, structural, physical) operating across micro- and macrolevels.[32] We operationalized the risk environment framework by delineating how the interplay between structural changes attributable to the COVID-19 pandemic—including public health measures, drug supply changes, and prescribing guidelines—shaped drug use and related risks. We assigned participants pseudonyms using an online pseudonym generator.

RESULTS

Although participants emphasized the role of fentanyl and emerging NPS in illicit opioid and stimulant supplies as key drivers of the overdose crisis before COVID-19, drug market changes during the pandemic had increased social–structural pressures and reshaped the risk environment in ways that exacerbated overdose vulnerability. Participants attributed severe drug shortages at the outset of the pandemic to disruptions to supply routes regionally (e.g., stay-at-home orders, suspension of ferries) and internationally (e.g., shipping disruptions, border closures). Drug shortages resulted in immediate price increases for illicit opioids and stimulants. Although the price of "down" (a regional term for street opioids) increased only modestly, the price of "side" (a regional term for methamphetamine) doubled or tripled across British Columbia. As 2 participants explained:

> The border closed and the meth went from being clean to being shitty. Then you paid an arm and a leg for shitty stuff, which you never used to before, which made people mad. (Michael, 40-year-old White man)

> It made meth more expensive, when COVID first started last year. . . . It was like $30 a point [approximately 0.1 gram] for side [from $10], then it went to $20. (Mark, 28-year-old White man)

Participants experiencing disruptions to part-time and casual work, including stigmatized and criminalized income-generating strategies (e.g., street vending, recycling, sex work, shoplifting), owing to pandemic-related public health measures (e.g., social distancing, stay-at-home orders) were particularly affected by increasing costs. As nearly all participants were ineligible for pandemic-related unemployment benefits, they struggled to manage drug dependence amid deepening poverty and subsequently experienced severe distress (e.g., anxiety, frequent withdrawal).

Participant accounts revealed how the growing unpredictability of the illicit drug supply since the outset of the pandemic had exacerbated overdose vulnerability. Participants reported that, although low-potency or fraudulent drugs (known as "bunk") were more commonly sold early in the pandemic because of supply shortages, these were quickly replaced by—or sold alongside—potent opioids containing high concentrations of fentanyl and adulterated stimulants. Among opioid-using participants, overdose vulnerability was exacerbated by this variability in the concentration of fentanyl in down—something that exposed people to drugs significantly stronger than expected. Jason, a 52-year-old White man, explained:

> Lots of time, the quality [potency] dropped and that's not been long for a couple months. . . . After that, [it was] coming back normal, even better [more potent]. . . . Lots of time, people overdose everywhere.

Participants emphasized that the increase in adulterants in the illicit opioid and stimulant supplies meant that people were often exposed to unexpected substances, particularly fentanyl-adulterated stimulants and etizolam-adulterated down. Although

participants attributed fentanyl-adulterated stimulants to accidental cross-contamination stemming from poor preparation and packaging practices, there was a common perception that etizolam was being added to the supply to mimic opioid effects "if people were short on fentanyl." Many participants reported experiencing overdoses because of these highly potent and adulterated drugs, including blackouts and memory loss in the case of etizolam-adulterated down.

Reliable Access to Regulated Drugs

The risk-mitigation prescribing guidelines were a harm reduction approach in response to the evolving risk environment during COVID-19—namely, continued drug market changes and increasing socioeconomic marginalization—that facilitated reliable access to opioids and stimulants of known contents and potency. Access to no-cost pharmaceutical alternatives enabled participants to exercise greater control over their drug use and reduced vulnerability to overdose. Participants emphasized that, although they had experienced more sporadic drug use patterns characterized by frequent periods of withdrawal and cravings at the outset of the pandemic because of supply shortages, rising prices, and reduced income, they remained uninterested in addiction treatment and yet wanted greater control over their drug use. This was often attributable to past negative experiences with medication-based treatment and recovery services. Prescription opioids and stimulants made available at no cost through the risk mitigation guidelines were positioned as a way to exercise greater agency over drug use and thereby avoid withdrawal and cravings amid deepening socioeconomic marginalization, drug market changes, and escalating overdose deaths. Shawn, a 49-year-old White man, explained:

> [People] haven't been able to, you know, make enough money to go buy it [down]. [COVID-19] has affected a lot of people's ability to make money, right? . . . They've been able to substitute with Dilaudid [hydromorphone] and actually make it through their day without getting sick or as sick.

Many participants reported that no-cost prescription drugs allowed them to "take back control" over their drug use. For some participants, this meant establishing stable drug use patterns that enabled them to avoid cycles of withdrawal and cravings, avoid bingeing and, in some cases, reduce overall drug use. For example, Andrea, a 29-year-old White woman, explained:

> It [helped] a lot because I was using a lot less because it would just kind of take away symptoms. So I wasn't craving it [down] as much, so I would buy less and use less, and it [hydromorphone] made me so I wasn't so ravenous for it [down]. And when I am ravenous for it, then I go out and do crime. So it made me do less crime as well.

Similarly, other participants highlighted that greater control meant reducing the need to engage in criminalized and stigmatized income-generating opportunities that were becoming scarce because of pandemic-related public health measures (e.g., stay-at-home orders, business and service closures). Participants also stressed that prescription opioids and stimulants were "cleaner" and "safer" than illicit drugs, that is, regulated drugs with known contents and potency. Participants described how access to pharmaceutical drugs reduced their overdose vulnerability by limiting their need to use illicit substances. Although 20 of the 40 participants had overdosed in the past year, none had experienced an overdose attributable to prescription opioids or stimulants. Participants described prescription opioids as protective against overdose because they had consistent potency—something especially important amid wide fluctuations in the concentration of fentanyl in down. Aisha, a 34-year-old Middle Eastern Woman, explained:

> The risk of overdosing, it's so high. The [hydromorphone] kept me alive—guaranteed me that I was gonna be alive because the dosage doesn't change. It's [a] stable dosage. With down, you don't know. One batch can be stronger than another and then if you get it from a different person, you don't even know if it's the same stuff.

Participants also emphasized that pharmaceutical prescriptions did not contain adulterants driving the recent increase in overdose deaths, something of concern because of more widespread etizolam and fentanyl adulteration in the opioid and stimulant supply, respectively. For example:

> I like it because it's cleaner and I know I'm not gonna just fuckin' go to the back alley, snort it, and die, right, because that could have been fuckin' fentanyl. So I know they're cleaner, so it gives me less worries. (Robert, 30-year-old White man)

Program Design–Drug Use Experience Tensions

Even as access to prescription opioids or stimulants through the risk mitigation

guidelines reduced illicit drug use among participants, 33 of 40 participants reported regular illicit drug use. These participants reported supplementing prescriptions with illicit drugs because of guideline limitations, namely that they were oriented toward keeping people from experiencing withdrawal and cravings. Although a minority of those interviewed expressed that this approach was "good enough" because they were "ready to quit" or primarily concerned with avoiding "getting sick," it was in tension with the objectives of most participants. Many participants emphasized that they wanted to continue to be able to get high, with some highlighting that the pleasurable effects of drug use were of particular importance as they managed pandemic-related stress and anxiety. These participants commonly characterized prescription opioids and stimulants as weaker and not resulting in the same rush, that is, they were qualitatively different and could not be used in the same amounts, ways, or combinations as illicit substances. Mark, a 28-year-old White man, explained how prescription opioids and stimulants were different:

> It's just fucking boring. I don't really feel the rush. . . . It's like having fucking cereal with no milk. It's just like jerking off with no busting a nut. You know what I mean? It's not the same. . . . You know what I mean? It's not the same. There's nothing there. . . . It's no comparison.

Other participants reported that the dosages prescribed to them were inadequate in meeting their needs, such as managing chronic pain and sometimes even mitigating withdrawal symptoms—something common among opioid-using participants accustomed to injecting large amounts of highly potent down. These participants explained that it was often necessary to supplement their prescriptions with illicit drugs:

> [Hydromorphone] doesn't last. It wears off by evening usually, by like, afternoon— like, middle afternoon between 3 and 5-ish. It starts to wear off so then I, you know, I would probably go pick up a point or whatever of down, and a little bit of meth would help. (Kenneth, 46-year-old Black man)

Participants were better able to manage their overdose risk because of access to prescription alternatives, as they were less likely to be purchasing and using drugs under duress. However, they remained concerned about exposure to the increasingly toxic illicit drug supply and emphasized the need to expand options to include regulated versions of illicit drugs:

> They're [PWUD] all saying what substance they want and the concept isn't, like, make it safe by making . . . giving them, like, a really lame, weaker version of that. It's, like, give them what they want. Give them a clean government-monitored version of the thing they're asking for. (Eric, 35-year-old White man)

Participants emphasized that, although the pandemic had resulted in an unprecedented public health response and the risk mitigation guidelines had reduced overdose vulnerability, the overdose crisis deserved a similar scope of action.

> The overdose crisis got a lot worse and there's still more people dying daily. . . . What we work with is just dealing with death all the time. . . . This pandemic, it's really heightened that and then they could have done the same with the overdose crisis. . . . It's millions or whatever dollars going more into the pandemic than it is for anything else. (Quincy, 28-year-old nonbinary Indigenous person)

DISCUSSION

Building on previous research on the impacts of changes to the illicit drug supply on the overdose crisis, we documented how the pandemic worsened a dire situation in a setting already characterized by fentanyl and other NPS (e.g., etizolam). Consistent with emerging reports from across North America, it is becoming increasingly apparent that the COVID-19 pandemic has catalyzed changes to illicit drug markets. Reports of fentanyl and other NPS are becoming more common,[10,11] and this phenomenon is altering the risk environment of PWUD. The COVID-19 pandemic has likely inaugurated a new wave of the overdose crisis that is marked by increased volatility of the illicit drug supply that urgently requires improvements to drug surveillance, including through drug-checking scale-up.

Whereas most harm reduction approaches (e.g., naloxone, supervised consumption sites) are best characterized as strategies that respond to—but do not prevent—overdoses, our findings demonstrate the potential of safe supply approaches to reduce overdose vulnerability by providing people with alternatives to potentially toxic drugs. Our findings demonstrate how previously documented benefits of safe supply approaches, including reductions in illicit drug use, improvements in quality of life, and reduced engagement in criminalized income generation,[25,26] can be achieved as these approaches are scaled up and extended to people who use stimulants.

Even though participants supplemented their prescriptions with illicit drugs, they reported drastic reductions in illicit drug use and overdose-related risks. Research using harm reduction–based outcomes consistent with the underlying principles of safe supply approaches is needed to more fully delineate the impacts of the risk mitigation guidelines, including epidemiological studies. However, if the public health response to COVID-19 has taught us anything, it is that there is an ethical imperative to act on the best available evidence, as well as on the demands of PWUD,[33] by scaling up safe supply approaches.

In British Columbia, a new policy directive—termed "prescribed safer supply"—has recently been announced that will extend prescribing practices outlined in the risk mitigation guidelines beyond the pandemic,[29] although the original guidelines remain in effect and have since been revised with a more explicit focus on mitigating COVID-19 risk. However, although the recent policy directive has been broadened to include fentanyl patches and sublingual fentanyl, it does not presently support stimulant prescriptions and thus raises concerns for people who have been accessing stimulants. As the overdose crisis continues, it is imperative that safe supply be extended to all PWUD while being continuously modified to maximize access, efficacy, and equity.

Finally, our findings draw attention to the tensions surrounding safe supply approaches primarily oriented toward managing withdrawal and drug cravings versus the desire of PWUD to experience enjoyment from drug use.[34] There is a need to account for pleasure in the design and implementation of safe supply approaches—something seldom examined in North American research and policy discussions on drug use. Better aligning safe supply approaches with the real-world experiences and desires of PWUD will likely necessitate expanding the options available to include regulated versions of criminalized drugs that they are accustomed to using, such as methamphetamine, cocaine, heroin, and even fentanyl. With growing support for drug decriminalization and strides being made in Oregon and elsewhere,[35,36] it is time that these discussions be broadened to also consider what a regulated drug market might look like in North America.

This study has limitations. We could not include participants who lacked telephone access. Telephone-based interviews were affected by challenges such as poor cellular reception, which affected data quality. Despite recruiting participants from across British Columbia, we were unable to fully account for dynamics in any particular setting and likely overlooked regional factors affecting the implementation of the risk mitigation guidelines. Finally, drug-using populations disproportionately affected by structural oppression (e.g., Indigenous persons, persons of color) were underrepresented.

Our findings demonstrate the critical role of prescription drug access through implementing risk mitigation guidelines in reducing PWUD's exposure to the illicit drug supply during the COVID-19 pandemic. Our findings underscore the urgent need to optimize and scale up these approaches as the overdose crisis evolves. AJPH

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PUBLICATION INFORMATION

Full Citation: McNeil R, Fleming T, Mayer S, et al. Implementation of safe supply alternatives during intersecting COVID-19 and overdose health emergencies in British Columbia, Canada, 2021. *Am J Public Health.* 2022;112(S2):S151–S158.

Acceptance Date: December 19, 2021.

DOI: https://doi.org/10.2105/AJPH.2021.306692

CONTRIBUTORS

R. McNeil drafted the article. R. McNeil, A. Ivsins, and J. Boyd designed the study. T. Fleming, S. Mayer, A. Barker, M. Mansoor, A. Betsos, T. Austin, and S. Parusel collected study data. M. Mansoor and S. Parusel coordinated study activities. All authors contributed to data analysis and provided critical feedback.

ACKNOWLEDGMENTS

This work was supported by the US National Institutes of Health (grant R01DA044181) and the Canadian Institutes of Health Research. T. Fleming and S. Mayer are supported by doctoral fellowships from the Canadian Institutes of Health Research. A. Ivsins is supported by a postdoctoral fellowship from the Canadian Institutes of Health Research. J. Boyd is supported by a Michael Smith Foundation for Health Research Scholar Award.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

This study was approved by the University of British Columbia/Providence Healthcare research ethics board.

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